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The phrase, involuntary life, is one that I have often used during the last four years to express that part of our natures that is independent of volition or of consciousness or of both. It refers to the action of mind and body in their reciprocal relations, both in health and disease. This is the side of physiology and of pathology that has been least studied, and is least understood, even among physicians and physiologists.

It is, however, the most important part of physiology and pathology, both in its relations to many diseases, and in relation to modern delusions. It is a department of science in which great advances are destined to be made,—in which advances are already being made,—and in proportion to this advance will many of the dark problems of the nervous system in health and disease be triumphantly solved. It is because of the backwardness of this side of physiology that so many of the great problems have thus far been the opprobrium of the human mind.

As an illustration of the involuntary life in disease, inebriety is one of the most interesting, as well as most difficult to comprehend. So long as a man is merely a drunkard, or a victim of the vice of drinking to excess, he has it in his power to reform if he have a good endowment of will and can keep out of temptation. But in the disease of inebriety the sufferer has little or no more volitional control over his drinking symptoms than has a sufferer from neuralgia, or from sick-headache, or from hay-fever. All the influence he can exert over himself in the way of reform must be *indirect*,—

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through the avoidance of the exciting causes whatever they may be; and in order to do this, it is oftentimes necessary for him to have the aid of outside parties. When his environment is bad, when temptation is before him, he has, practically, no will in this special relation, but is as truly an automaton as a patient in the horrors of tic-douloureux or small-pox, subject to the varying influence of weather, of wind, of diet, of medication, of mental influence in every form; the inebriate is, indeed, not himself but somebody else. In perfect health man is a bundle of reflex actions, with a very small margin of volitional life; but in a disease of the nervous system, like inebriety, this small margin of what we call volition is swept away, and the man is an automaton so long as he is in the face of environment that excites the morbid desire and has no other mode of exhibiting his manhood than by changing his environment, which he is oftentimes powerless to do without external aid; for the very effect of the environment is to take away the power of changing it, which is the very thing desired. Periodical inebriates, in the intervals of their attacks, often put themselves under charge of some friend, or enter an asylum, or leave the vicinity of temptation, and this infinitesimal fraction is all that is left of their volition.

The best way to study such cases of disease, is to compare them with the lower forms of life; for example, with the venus (fly-trap), which has been so well studied by Mr. Darwin and others. This plant, according to Darwin and other experimenters, feeds on meat and other substances that may be given to it. It is so sensitive to external irritation, that when irritated by so small an object as a particle of hair weighing only $\frac{1}{1000000}$ of a grain, the tentacles sweep through an angle of about 180° ; less than a millionth of a grain of phosphate of ammonia in solution, causes movement. It is shown that these plants do all that animals can do in the way of catching, digesting, and absorbing food. In the light of these studies, the ordinary distinctions between plants and animals break down. These plants have no demonstrable nervous systems, and yet they respond to irritation as intelligently

as even the higher orders of animals. Conscious responsibility none would claim for these plants ; but their actions are as orderly as many of the phenomena that are all the time taking place in the human system. If these plants were endowed with mind they could not perform these special functions any better than they now do. If, then, there is no conscious responsibility in the movements of these plants, there is no reason for attributing conscious responsibility to many of the constantly occurring phenomena of the human organism. Through the varied phases of nervous disease illustrations of human automatism are seen. Thus, no one would think of attributing responsibility to the phenomena of typhoid-fever, or small-pox ; after these diseases are once contracted, these maladies take a definite form uninfluenced, to any great extent, by the mind of the sufferer. In other words, the phenomena of these maladies move on automatically as though the patient were a plant, or even a lower form of life. Whatever responsibility belongs to the patient applies to the period before the symptoms of the disease appeared ; while yet there was opportunity and ability to avoid exposure.

Such is the philosophy of nearly all the functions of the human body in health and in disease ; the phenomena of life, physiological and pathological, those relating to the body and those relating to the mind, take place automatically ; all that we can do is to control, so far as possible, our environment.

Certain diseases connected with the sexual organs illustrate automatism in a most remarkable way, and assist us in obtaining a clear and correct idea of the true philosophy of inebriety. Dr. J. N. Hyde of Chicago, has lately published some cases of a most striking character in their bearings on this subject of automatism in disease, thus :

A young man had the habit of masturbating in the morning a little while before rising, and while asleep and unconscious of his acts ; a severe pain in the head would attend the act and follow it. The habit being entirely beyond the patient's direct control, was only broken up by the coöperation of his brother, who woke him up half an hour or so before

the usual hour of rising, and thus saved the involuntary performance. Another case yet more remarkable cited by the same author, was that of a young man who one day after a hearty dinner, arose from the table, went into his room and locked himself in, where he was seen to be engaged in the act of masturbation. On being subsequently reproved for the habit, he expressed contrition and promised to reform; but again he was detected in the act, going away by himself from a picnic that he was attending. He stated that the attacks were preceded by violent pain in the head, and that what he afterwards did was utterly beyond his control. The next time he had the premonitory symptoms, he was taken in charge by his parents and his hands were tied behind his back, on which he at once went off into convulsions; his hands being released, he began to masturbate furiously. After this, as after the other attacks, he fell into profound sleep. The history of the case shows that the act of masturbation took the place of an attack of epilepsy, being in a degree vicarious to it—a safety-valve for the disturbed brain. The accompanying symptoms—pain in the head, and sleep, peculiar expression in the face, etc.,—make this point quite clear.

A patient under my care at one time became so debilitated in this function, that he would perform, or attempt to perform, the sexual act while asleep. In all such cases the phenomena are automatic—independent of the volition of the individual, and so far forth irresponsible acts. Whatever responsibility there may be for such sufferers, belongs to the time when the habit was not yet formed. During the crisis, these persons are no more responsible than the venus fly-trap, and for the reason that they have at the time no more volitional power.

My friend, Dr. Crothers of Hartford, has placed at my disposal the following cases illustrative of the automatism of inebriates. In these cases, atmospheric influence was evidently the sole exciting cause of the attack, the sea-air being the cause of an attack of inebriety, just as it might be the cause of an attack of rheumatism, or of lung-fever

Cases of this kind have, I believe, never before been published. These four instances of the dependence of the disease inebriety on atmospheric conditions, are of the highest conceivable interest and importance, scientifically and practically; and may help to make those who read this at once more intelligent in regard to the philosophy of inebriety, and more charitable toward those who are its victims.

Cases in which the sea-air seemed to be the exciting cause of Inebriety.

CASE FIRST.

George Chase, a college graduate, was a speculator and traveling man who drank moderately during college life; married unhappily at twenty-four, and two years later was divorced from his wife. For several years he bought and sold Western farm securities, and drank half a dozen times a year to intoxication, then signed the pledge and was sober for two years. His rapid accumulation of a fortune by some army contracts led him into fast life, which lasted four years, when he became reduced both in health and means. Again he signed the pledge, and two years later he speculated in summer residences at Newport, and unexpectedly drank very hard, breaking up his business. The next three years were passed in traveling for an insurance company located West, as adjuster—drinking nothing but lager beer, and that at long intervals, never intoxicated, and never using anything stronger.

He married, and went to Long Branch on a wedding tour. The second night he drank very hard, and continued to do so for a week, then he returned West, reformed, and was very ardent in the temperance cause. Nine months later he paid a visit to a relative on the sea-shore and drank as before, without cause or reason.

Returning home he reformed again, and two months after was down by the sea on business, and complained of painful exhaustion, which terminated in cramps and colic. Alcohol was given with relief, but intoxication followed. His wife began to observe his relapses at this time, and noted that whenever he went down by the sea-shore he drank, but when he was back in the interior he always had command of himself. The only explanation he gave was, that "he could not help it," or, that it was owing to some insignificant cause which was not clear to others. No man regretted more keenly his position, or relapses, and did more to help himself. He never could realize that he drank, only when breathing sea-air. Eight instances of intoxication under these conditions were noted.

Finally his wife died, and he became partially paralyzed from an injury and grief. He is now temperate, living in the interior, and is a Spiritualist.

CASE SECOND.

Harrison Granger, born in Ireland. A book-keeper; a man of much poetic talent and literary tastes; a musician, and of excitable disposition. At one time he was a spiritual medium, and gave private seances with strong faith in this doctrine. Then he became a radical disbeliever in every form of religion; was a leader in several clubs, although a temperance man, rarely drinking anything but wine at long intervals. He was neuralgic, and after any special excitement and exhaustion, would go to bed and rest for a day or more. The first drinking came on during an excursion to Coney Island, where he was profoundly intoxicated. After this he did not drink much for the next two years, but complained of rheumatism and exhaustion; from the failure of the firm he lost his situation, and drank to intoxication for several days after. A year of much irregularity followed, with drinking and general dissipation, then he reformed and began to work as stenographer on a large daily paper. Some months after, he drank very unexpectedly while representing his paper as a reporter, in a sail about the forts of New York with some distinguished visitors. His conduct was such, that he was discharged. Reforming again, another situation was soon obtained. Another year went by, with two relapses under similar circumstances, particularly in the suddenness of the attack, and the unusual adverse occasion.

He went to England, and drank very hard coming and going, but was from his own statement sober when on land. On his return he went into business in Harrisburg, Pa. During the next five years he was not intoxicated, although drinking wine occasionally; he was successful in business, married and lived happily. The same periods of exhaustion and mental gloom, or low spirits, would come on every few weeks. He went as a member of an important committee to examine into the accounts of a failing firm at Charleston, S. C. The second day, he rushed away and drank to intoxication, and was unfit for any further business. The next year he came to New York, and spent the night on Staten Island, drinking early in the morning to intoxication. After this he became an ardent temperance reformer, lectured and worked hard for two years more; then drank again under similar circumstances, always near the sea-shore. Was under treatment at an asylum for four months; after this went to New York city and relapsed; returned to the asylum, remained six months; went West and was sober for eighteen months, until he went to Boston, where he drank again. At present he is in the interior, comparatively healthy, and temperate. He can give no rational reason for drinking, believes it is a wicked spirit, or occult influence, is superstitious about the sea-shore, has delusions of suicide while looking at the waves, is much broken down in mind and body, and is suffering from acute rheumatism.

CASE THIRD.

H—, a Methodist clergyman, aged thirty-four. Mother suffered from epilepsy many years before death, one sister hysterical, a brother afflicted with asthma; during childhood he had St. Vitus dance, and was operated on for strabismus; was a nervous, passionate man, subject to great changes of disposition and mental activity; had dyspepsia and was treated for it successfully by the use of bitters. He was impulsively fond of certain dishes, and manifested much childishness to procure them. He was a radical temperance man, positive and fanatical in his expression of opinion. He attended a sea-shore camp-meeting, and was noted for extravagant enthusiasm, and abject prostration that lasted for a week after the meeting closed. The next year he was even more excited, and to the grief of his friends he was found intoxicated after the meeting closed, and a bottle of whiskey secreted in his satchel. The next year he was a spectator at a sea-shore meeting, and drank very hard again. This time he deplored it deeply, and went back to the interior only to labor more earnestly in the temperance cause. The same year he was again at the sea-shore and drank as before, only procuring the liquor more secretly. He was transferred to a Western conference, and for five years was an active temperance man. He suffered from dyspepsia and melancholia at times, and was more excitable in his manner and actions. His wife dying, he came East for a rest, and went to Long Branch. The second day after reaching this place he drank to intoxication, and kept it up for a week, when the landlord turned him away as a nuisance. His particular delusion was prayer for drinking men, going into the bar-room and urging men not to drink, and praying for them, while he was almost oblivious of his condition. He returned to the West, and for three years more was temperate and worked as usual. He came to New York and went with a friend to Coney Island, and drank hard. He described his drinking as an impulse that he could not resist, coming over him like a pressure which was unbearable, demanding stimulants as a preventive of death. A friend went with him to the sea-shore, as an experiment, and found that after a few hours he became restless, excited, would break out in perspiration, or have a nervous chill; drink large quantities of ice-water, seem to lose all pride or consciousness of his condition. On going a few miles back from the coast, this paroxysm left him, and he was grateful that he had escaped. This man is now in the interior and fully conscious of his danger, and has not ventured near the sea for three years, except once last year, in company with some watchful friends, spending half a day at Ocean Grove, with the same agitation and alarm, and sudden going away and passing off of these symptoms.

CASE FOURTH.

E—, an inventor and practical mechanic, of healthy parentage, who during early life developed a precocious talent for invention, which did not increase after maturity. He was a fine musician and spent much time collecting rare instruments. At twenty-five he suffered from partial sun-stroke, from which he recovered slowly; neuralgia and the usual entailments of nerve derangement followed. At twenty-eight he had invented a machine from which large incomes were received. He changed his living, to one of more luxury and indulgence. He was temperate in drinking, but frequently used food to excess. He was married and lived very happily. About this time he suffered from some form of fever, which was thought to originate in exhaustion from over-work. He went to San Francisco, to rest and for change. With some friends, a small hotel on the coast was selected as a residence. He seemed in perfect health and spirits, when all unexpectedly to his friends and wife he drank to intoxication. He gave as a reason, that the liquor was so agreeable. The next day he drank again, and so on for four days, when his family became alarmed and he was taken to Sacramento. Here he recovered. The tour was continued for six months, during which he manifested no disposition to drink, but became radical in his temperance views. The next year, business reverses depressed him and he went to Newport to rest with some strong temperance friends. A few hours after he arrived his manner was noticed to change; an unusual reserve came over him, he sought to get away by himself, complained of a severe head-ache; a few hours later he drank to intoxication and kept it up for three days, until his friends took him away, when the old desire for alcohol ceased. During the next year he was treated by several specialists of nervous diseases for spinal anæmia, etc. His fortunes improved, and he went over to Europe, drinking all the way over very hard, and abstaining rigidly on the Continent, but using alcohol excessively when he came to the sea-shore and on the return voyage. His health was much broken, and he retired from business, living a quiet, secluded life for a year or more, then he began to invent machinery for perpetual motion, and manifested a childish credulity and general failure of his mental powers. Two years after, he went to the ocean to test some machinery that would get its motive power from the waves, when he drank again and had an attack of delirium tremens. He was sent home, and slowly recovered again. Six months after, he went back and drank again to intoxication. His wife and friends now realized for the first time that he drank always at the sea-shore, and have avoided all exposure to that cause. He is now temperate and suffers from neuralgia and anæmia with weakened mind, and gives evidence of premature old age.

In the above cases the features worthy of note are these :

1. The simple contact with the salt air provoked inebriety with the accompanying symptoms of headache and various depression.

There is clear evidence from these records that the sea-air, on the shore or at sea, without any of the attendant factors, as drinking, or conviviality, or the sight of drinking, excited the uncontrollable desire for alcohol.

2. Relief in these cases could only be obtained by leaving the sea-side and going into the interior. Away from the sea, all other conditions being the same, not only the inebriety, but all the preliminary and accompanying symptoms, as headache, depression, debility, and nervousness, passed off without any effort or treatment.

The analogy to hay-fever, neuralgia, sick-headache, and chorea, is obvious. The best and most striking analogy is found in hay-fever. Those who are familiar with that disease are aware that it may be brought on or relieved almost instantly by any change of atmosphere; a sea-breeze will at once relieve it; a land-breeze will as quickly excite it; going up a mountain or into the woods it gradually disappears; returning to civilization it gradually reappears; the attacks, like those of inebriety, are sometimes preceded or accompanied by headache, nervousness, and depression of an indefinite character.

3. Science thus confirms more and more the instinctive teachings of morality. Resist the beginnings of evil.*

* THE "JUMPERS," OR "JUMPING FRENCHMEN."—During the past year I have been investigating a manifestation of the Involuntary Life of the most novel and interesting character. It is found among the French Canadians, and is there known under the expressions, "*Jumpers*," or "*Jumping Frenchmen*." It appears, according to my researches, that a certain proportion of that people—mingled French and Indian blood—have acquired the permanent habit, which they cannot control, of jumping, or striking out with their hands, when commanded to do so, suddenly and authoritatively, by any one who chances to be near them. The habit appears to have been acquired, in the first instance, by tickling one another, in the winter camps where they cut lumber in the Maine woods. They are a somewhat degraded race of beings; have few resources, very little intellect, and no mental discipline; cannot, usually, read or write, and, in their camps, while away the long winter evenings by playing upon each other's ticklishness until some of them get into a state of abnormal suscepti-

bility that compels them to obey, automatically and instantly, any sudden order, as, to strike, or to catch, or to jump, or even to vomit; they are at the mercy of their companions, and are frequently so much annoyed that they have to leave the camp where they are employed. The more they are played upon the worse they become; for the habit grows with exercise. This condition is not an epidemic, but a fixed and permanent state; and, so far forth, is different from the phenomena so often witnessed in revivals. It is, in fact, as I have elsewhere stated, a liability to be entranced on slight excitation; differing from the allied trance to which all of us are liable only in this, that it follows a very much milder irritation. When these "Jumpers" are excited to jump or strike, or to perform any of their peculiar automatic acts, they present the appearance of entranced individuals; their faces turn pale, their eyes are fixed and glassy, and sometimes their limbs tremble. One of these Jumpers is a waiter, and when told suddenly to "drop it," he at once drops whatever he may have in his hand, though it may be on the head of one of the guests, or on the floor. Another has so susceptible a stomach that he at once throws up his meals when any one but "gags" or makes the motions of vomiting in his presence; thus he has grown thin, and at one time, was almost starved. One Jumper, when told to "strike," struck against a red-hot stove and burned himself. Accidents of this kind are quite frequent in their camps. One man, standing on the shore of a pond with a five-dollar gold piece in his hand, was told to "throw it;" he threw the money—a large sum for him—into the water. Another was standing near a kettle of fish; he was told to "jump," and he jumped into the kettle. When one of these Jumpers is addressed sharply and quickly in any language with which he is not familiar, he, at once and automatically, responds in that language. Thus, in numberless ways, they are abnormally susceptible to stimuli which, in the same degree, would have little or no effect on others.

In its relation to the present subject,—inebriety,—these extraordinary phenomena are of interest as illustrating the power and extent of the involuntary life, showing how varied and complex and subtle are the manifestations of this side of human physiology. These Jumpers, in the acts here referred to, are absolute automatons; utterly without volition or responsibility. Whatever responsibility there may be in these cases, belongs to the time when the habit began to be formed,—their first playing and trifling with themselves and others in the loneliness of their winter camp-life; they are no more to be blamed for their acts than are patients afflicted with St. Vitus' dance, or hysteria, or epilepsy, or with any form of insanity. The treatment, if any is used, should consist in removing the victims from the temptations of camp-life; they should be isolated, or, at least, kept away from those who are similarly afflicted, or who would take pleasure in playing upon, and thereby increasing, their weakness; at the same time, everything that educates and develops their higher cerebral centers will be of service. Indeed, it has already been noticed that they grow worse by aggregation, and better by isolation. Their habit is a real and serious affliction to these people; a source of anxiety and positive torment; they would rejoice to be delivered from it.

On the other side of the world, among the Malays, in the Island of Java, according to the London Medical Record, phenomena precisely similar to those exhibited by the "Jumping Frenchman," are seen. A woman carrying a child and seeing one even pretend to drop any article may at once drop that child. Many other interesting illustrations are given.

Very recently, also, my attention has been directed to some allied phenomena connected with a religious revival now in progress in a certain town in Vermont. The victims of this excitement roll on the floor or ground in most absurd and undignified attitudes; whence they are called "*Holy Rollers*." Unlike the Jumpers, however, these Rollers are not in a permanent liability to their disorder; when the excitement is over, they will spontaneously recover. Just at present, in the height of the public enthusiasm, they are, on this subject, pure automatons. In the same line are the cases of starving girls, hysteria, and hysterical trance, like that of Mollie Fancher of Brooklyn, which is now exciting so much enthusiasm. I have studied a number of similar and allied cases, and I never share the popular prejudice against them. They are without volition, practically irresponsible, and to be blamed—if blamed at all—for the *beginnings*, not the endings of their disease. Like inebriates, they are to be treated by taking them from their home and friends and giving them a radically new environment.